1. MACHINE SUMMARY

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1. PREFACE

This manual provides Technical Service Information for the RISOGRAPH **GR 3770** duplicator. You are advised to use this together with "RA Series" "GR Series" Technical Manual as this "GR 3770" Technical Manual includes only the items different from the other GR Series machines.

This manual is published as a reference guide for use by RISO Group (RISO Kagaku Corp./RISO, INC./RISO EUROPE Ltd.) Certified Technical Representatives experienced in duplicator repair and service.

This manual also provides procedures for removing and installing major components. Following these procedures will minimize machine malfunctions. This information and format will also increase technical representatives' awareness and experience regarding repairs necessary to insure end-user satisfacion.

If assistance is required, please contact one of the following: _____

[RISO Kagaku Corp.]
Overseas Technical Section, Overseas Technical Dept.
2-5-1, Akanehama, Narashino-shi, Chiba 275, JAPAN
TEL: (0474) 52-4111 FAX: (0474) 52-3106 TELEX: 252-2298RISO J

[RISO EUROPE LTD.]
1230 High Road, Whetstone, London N20 0LH, United Kingdom
TEL: (81) 446-1188 FAX: (81) 446-9547

[RISO, INC.]
NOTE: Before attempting to correct machine malfunctions, study the Technical Manual and make sure all questions and/or concerns have been satisfied. If necessary, please use the Technical Hotline:

TECHNICAL HOTLINE

800-578-7476
(Emergency Technical Assistance Only!!!)

REFERENCE	ADDRESSES	FOR
A	RISO, INC. Tech. Support Center 310 Andover Street Danvers, MA 01923	Technical Support Operations Correspondence and Technical Training
B	RISO, INC. REPAIR DEPT. 310 Andover Street Danvers, MA 01923	Repairs and Warranty Claims

CAUTION

[Handling of Lithium Battery]

- **Never fail to follow the following instructions when you discard the used lithium battery.**

1. Never let the battery short-circuited.

If the (+) and (–) terminals contact each other or metal materials, the battery will be short-circuited. If the batteries are collected and stored inorderly or one upon another, the above-mentioned case will occur.

-DANGER-

If the battery is short-circuited, it will heat up and may in some cases explode into fire.

2. Never heat up the battery.

-DANGER-

If you heat the battery up to more than 100°C or put it into the fire, it may burn dangerously or explode.

3. Never disassemble the battery or press it into deformation.

-DANGER-

If you disassemble the battery, the gas pouring out of the inside may hurt your throat or the negative lithium may heat up into fire.

If the battery is pressed into deformation, the liquid inside may leak out of the sealed part or the battery may be short-circuited inside an explode.

4. Never fail to keep the battery out of reach of children.

If you put the battery within reach of children, they may swallow it down.

Should they swallow the battery, immediately consult the doctor.

[Replacement of the Lithium Battery]

1. **The lithium battery must be replaced by a trained and authorized service technician.**
2. **The battery must be replaced only with the same or equivalent type recommended by the manufacturer.**
3. **Discard used batteries according to the manufacturer's instructions.**

!! WARNING !!

Important Safety Precautions

1. Always disconnect electrical supply before placing hands in the machine.

1. **To avoid injuries:**
   Be sure to disconnect the electrical power before disassembling, assembling, or when making adjustments on the machine.

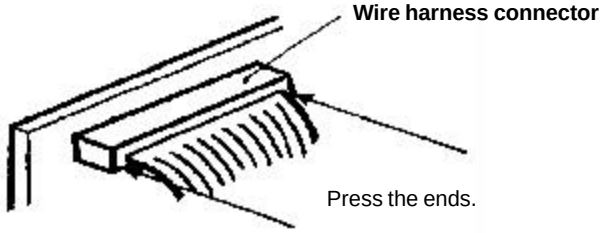
2. **Protection of the machine:**
   Make sure to turn OFF the power to the machine before plugging or unplugging the electrical connectors, or when connecting a Meter.

2. Always connect electrical connectors firmly.

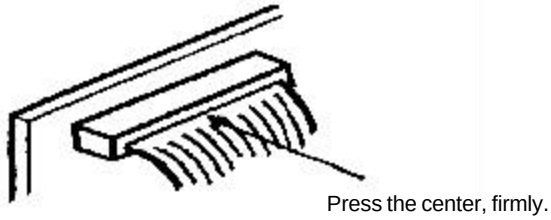
1. **To avoid electrical failure:**
   The connectors must be connected firmly together and onto the PCBs.
   Press on the ends of the connectors and then on the middle to ensure a firm fit.

2. **Protection of the electrical components:**
   The electrical components may be damaged due to short circuits caused by a loose connector.

FIRST



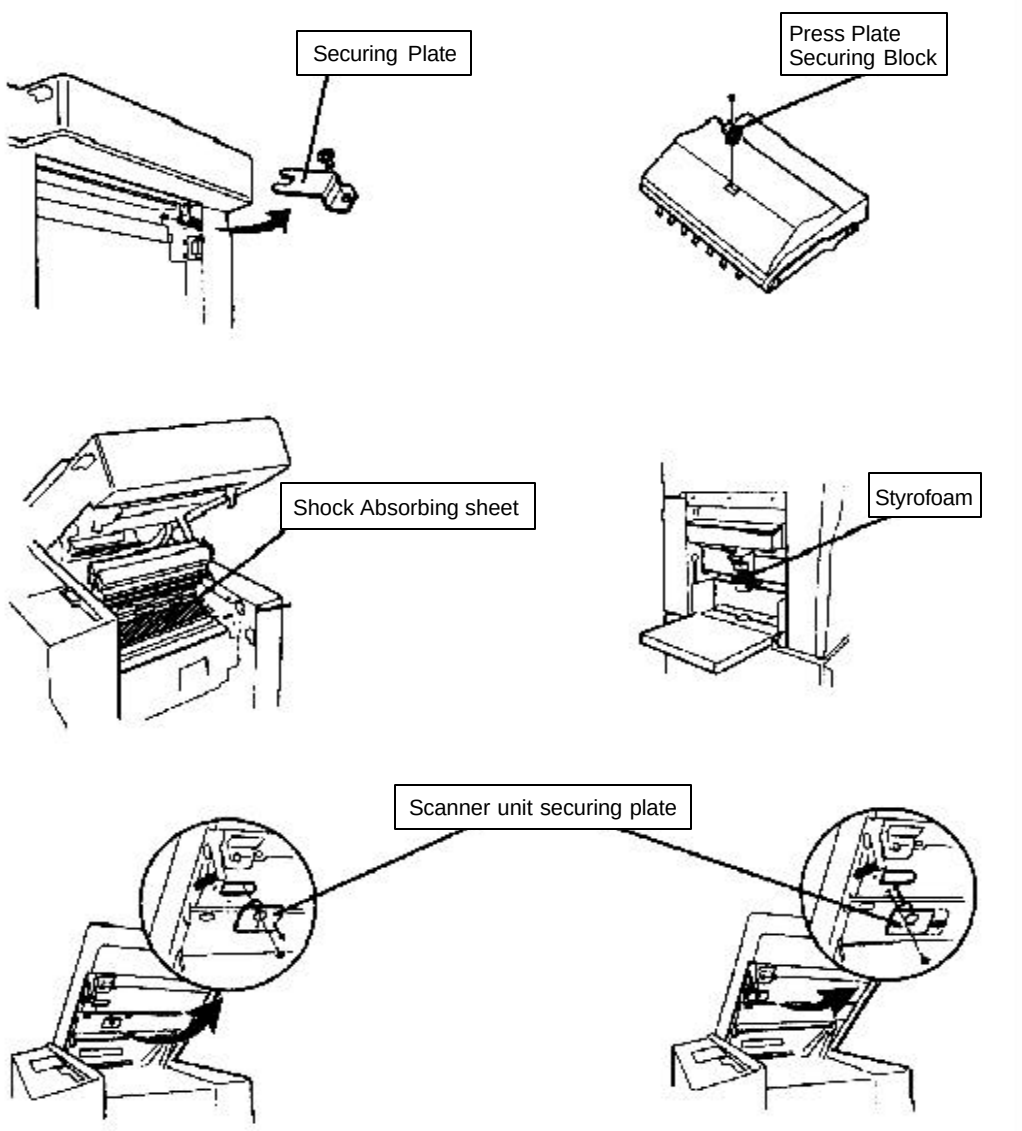
THEN



NOTICE

Please be sure to follow the procedures as below in installation :

1 Remove the parts in 5 places as shown in the figures below.
2 Activate the Test mode.
3 Enter No.133 to release the electrical lock.



(1) Remove the securing screw on the Scanner Unit Securing Plate to release the lock.

(2) Place the Scanner Unit Securing Plate into the left end of the hole, then secure it again.

Caution

Do not turn the power ON with Scanner Unit Securing Plate left unremoved, which may damage the machine.

2. FEATURES OF THE RISOGRAPH GR3770

This chapter mainly describes technical features. As for advantages concerning business operation, see the documents issued by Sales Dept.
The GR3770 is a new type of the GR3750 for which 600dpi has been realized.
Special features of the GR3770 are as follows:

- **HIGH-PRECISION IMAGE ACHIEVED BY RESOLUTION OF 600dpi**
  - Adoption of Optical Image Scanner
    - Due to increased size of the image scanner, it is fixed for shipment.
      ⇒ For release, shift the fixing metal and execute Tst Mode No.133. (The instruction sheet is attached to the machine.)
    - Due to increased size of the image scanner, the FB original detection sensor is hidden in FB/HP sensor position. Therefore, the image scanner is shifted for detection of an original copy.

- **ADOPTION OF HIGH-DENSITY INK/DEDICATED MASTER**
  - Use of High-Density Ink (HD ink) Developed to Achieve 600dpi Performance.
    - A special drum dedicated to the GR3770 is mounted which is applicable to the HD ink bottle. (The ink bottle set SW is added.)
      - The Clamp gear has been increased in strength to meet the change in the clamp unit.
      - Although the present color drum is useable, the clamp plate base needs to be changed because of the abovementioned grounds.
  - Use of Dedicated Master (77W) Developed to Achieve 600dpi Performance.
    - Master roll diameter has been increased due to looser winding in comparison with the present master (76W).
      - Master flange size has been increased (due to the above ground.)

- **INCREASE IN PHOTO IMAGE REPRODUCIBILITY THROUGH USE OF CONTRAST ENHANCE MODE**
  - As against the adjustment in γ compensation which was available with the image processing PCB, adjustment in two stages (three stages if including “Normal”) has been made available at the users’ level.

- **REDUCTION IN MASTER-MAKING TIME THROUGH USE OF BOOK MODE**
  - Pre-scanning has been eliminated through use of realtime trimming.
    (However, the overall master-making time was increased due to adoption of 600dpi.)

- **CLAMPING WORK STABILIZED AS CLAMP UNIT HAS BEEN CHANGED**
  - The clamp unit UP & Down movement can be also drived by rotation of the clamp motor as well as opening/closing movement of clamp plate.
  - “T14” is not displayed even if the clamp unit is lowered manually.
  - Mounting on the present models has not been enabled as yet.

- **OTHERS**
  - The original stage glass and the original stopper are each independently provided.
  - The write pulse motor is adjustable in speed.
  - Applicable to New Computer I/F Rev.5.xx. (Not applicable to Rev.4xx.)
  - Applicable to New Sorter I/F specification. (Not applicable to the former Sorter specification.)

3. Specifications

GR3770

• **Processing**	High-speed automatic digital scanning Fully automatic, thermal screening duplicating system
• **Time to First Copy**	Ledger or A3 original / Approx. 29 seconds Letter or A4 original / Approx. 22 seconds
• **Print Speed**	5 selectable print speeds (60, 80, 100, 110, 120 sheets/min.)
• **Scanning Resolution**	600 dpi
• **Original Type**	Bound documents or sheets
• **Original Size**	- **For the Stage Glass:** Max./A3 (297 × 420mm) or Ledger (11 × 17 inch) Min./Business card (50 × 90mm) or 2 × 3 1/2 inch - **In the optional ADF Unit:** Max./A3 (297 × 420mm) or Ledger (11 × 17 inch) Min./A6 (100 × 148mm) or 4 x 6 inch
• **Paper Size**	Max./A3 (297 × 420mm) or Ledger (11 × 17 inc) Min./A6 (100 × 148mm) or 4 × 6 inch
• **Original Weight**	- **For the Stage Glass:** 10 kg or less - **In the optional ADF Unit:** Max./110 g/m^2 Min./50 g/m^2
• **Paper Weight**	Max./210 g/m^2 Min./46 g/m^2
• **Image Area**	A3 Drum/290 × 412mm Ledger Drum/10.7 × 16.5 inch
• **Paper Capacity**	1000 sheets in feed and receiving tray [Based on 64 g/m^2 paper]
• **Optional ADF Capacity**	50 originals
• **Machine Weight**	Approx.116 kg
• **Dimensions** [W × D × H]	In use/1316 × 669 × 634mm In storage/753 × 669 × 634mm
• **Power Source** <Requirements>	Picture Model : 220 to 240 VAC, 50/60 Hz <2.0A> USA Model : 120 VAC, 60 Hz <5.0A> Metric Models : 110 VAC, 60 Hz <5.0A> - 110-V model 220 to 240 VAC, 50/60 Hz <2.0A> - 220-V model
• **Reduction Parameters**	4 selectable reductions (94%, 87%, 82% and 71%) [94%, 77%, 75% and 66% in USA models]
• **Enlargement Parameters**	3 selectable enlargements (141%, 122% and 116%) [141%, 127% and 121% in USA models]
• **Zooming Parameters**	50% to 200%
• **Features**	LCD monitor, Print speed/density control, Confidential mode, Two-up printing, Book document processing, Programmed printing, Memory mode, Contrast enhance mode, Dot screen mode, Interface capabilities, Photo mode, Automatic idle and Automatic scanning contrast adjustment
• **Print Colors**	Black, blue, red, green, brown, yellow and etc.
• **Optional Accessories**	Color drum unit, A4 drum unit, ADF III(S) unit, Digitizer III(S), TM2500 sorter, TM5000 sorter, Sheet feeder SF3000, Key/Card counter III(S), Job separator III and Computer interface

4. PRODUCT COMPATIBILITY

Accessory Compatibility chart

PRODUCT \ APPLICABLE MODEL	GR3770	GR3750	GR2750	GR2710	GR1750	GR1700
GR3770 Black Drum	○	×	×	×	×	×
GR Color Drum A3	△	○	×	×	×	×
GR Drum B4/A4	×	×	○	○	○	○
GR3770 Black A4 WIDE Drum	○	×	×	×	×	×
GR Color Drum A4 WIDE	△	○	×	×	×	×
ADF UNIT III (S)	○	×	×	×	×	×
ADF UNIT III	×	○	○	○	×	×
Sheet Feeder SF3000	○	○	○	○	○	○
TM5000 Sorter	○	○	○	○	○	○
TM2400 Sorter	×	○	○	○	○	○
TM2500 Sorter	○	○	○	○	○	○
DIGITIZER III (S)	○	○	○	×	×	×
DIGITIZER III	×	○	○	×	×	×
Key/Card Counter III (S)	○	○	○	○	○	○
Key/Card Counter III	×	○	○	○	○	○
Job Separator III	○	○	○	○	○	○
GR Precision Stacking Tray	○	○	○	○	○	○
Interface Board III (S)	○	○	○	○	○	○
Interface Board III	×	○	○	○	○	○

○ : Fully Compatible
△ : Color Drum only
× : Not Compatible

Consumables Compatibility Chart

APPLICABLE MODEL / PRODUCT	GR3770	GR3750	GR2750, 2710, 1750, 1700
RISOGRAPH GR MASTER 77W	○	×	×
RISOGRAPH GR MASTER 76W	×	○	×
RISOGRAPH GR MASTER 75	×	×	○
RISOGRAPH GR INK HD (BLACK)	○	×	
RISOGRAPH GR INK (BLACK)	×	○	
RISOGRAPH GR INK (RED)	○		
RISOGRAPH GR INK (BLUE)	○		
RISOGRAPH GR INK (BROWN)	○		
RISOGRAPH GR INK (GREEN)	○		
RISOGRAPH GR INK (YELLOW)	○		
RISOGRAPH GR INK (GRAY)	○		
RISOGRAPH GR INK (LIGHT GRAY)	○		
RISOGRAPH GR INK (MARINE RED)	○		
RISOGRAPH GR INK (BRIGHT RED)	○		
RISOGRAPH GR INK (BURGUNDY RED)	○		
RISOGRAPH GR INK (FEDERAL BLUE)	○		
RISOGRAPH GR INK (MEDIUM BLUE)	○		
RISOGRAPH GR INK (PURPLE)	○		
RISOGRAPH GR INK (TEAL)	○		
RISOGRAPH GR INK (FLAT GOLD)	○		
RISOGRAPH GR INK (ORANGE)	○		
RISOGRAPH GR INK (HUNTER GREEN)	○		
* ORDER COLORS	○		